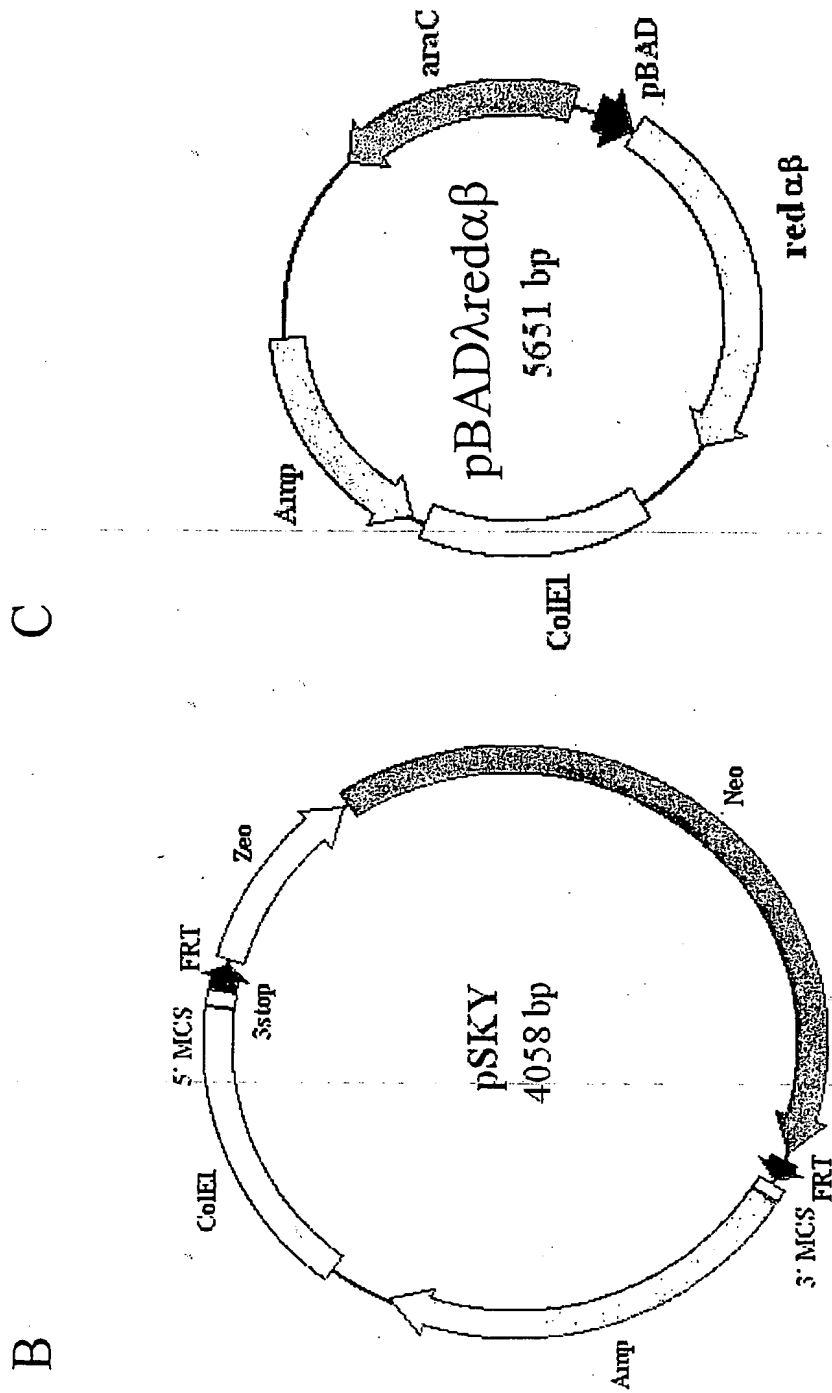


Figure 1A



Figures 1B and 1C

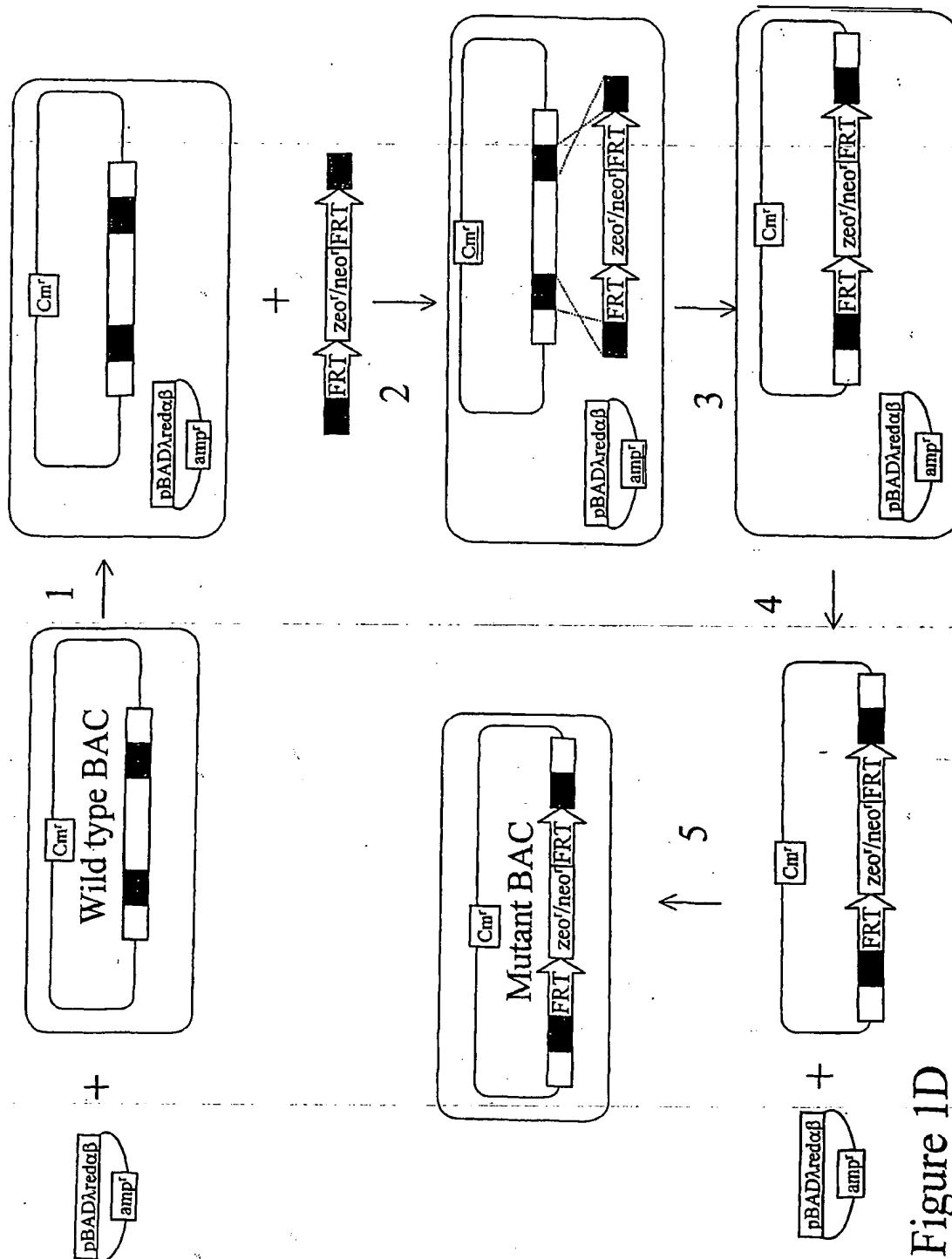


Figure 1D

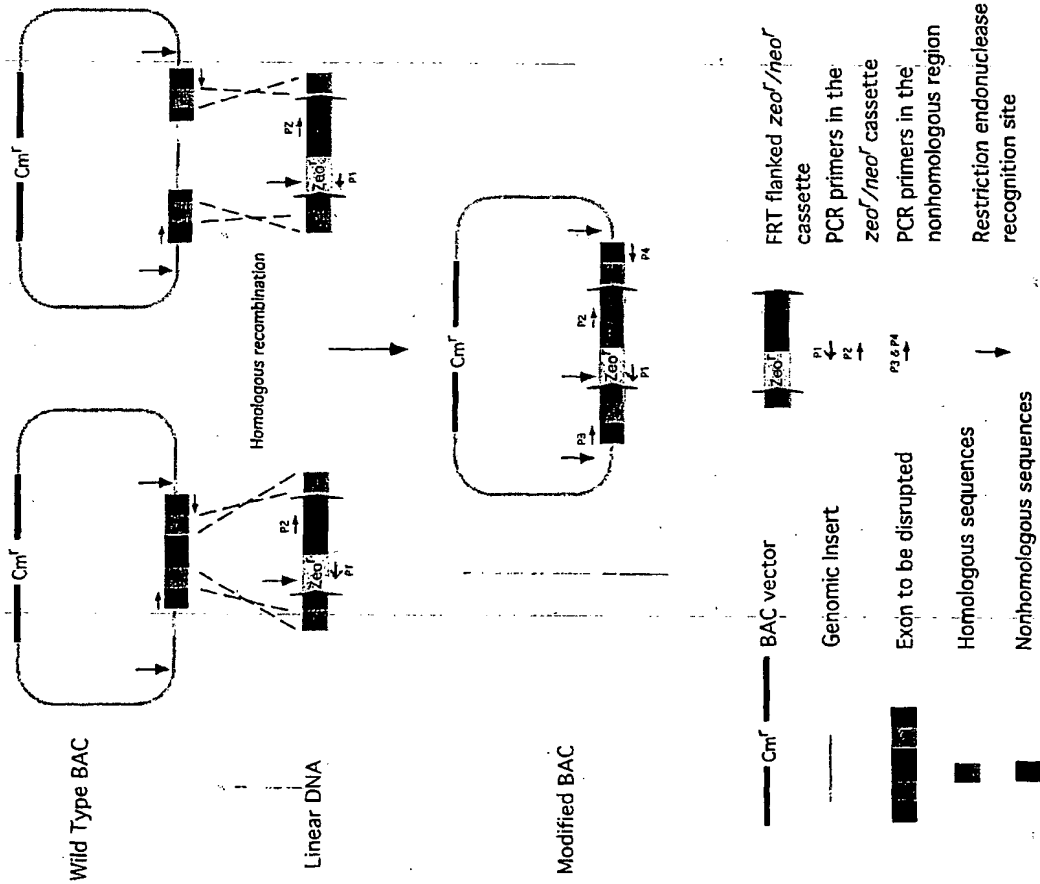
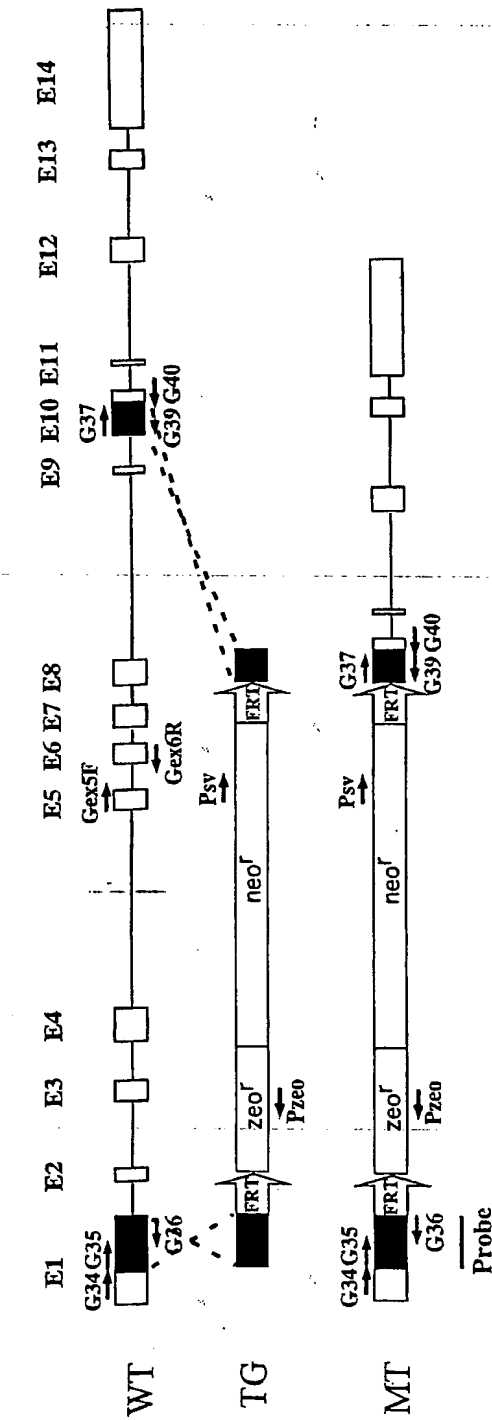


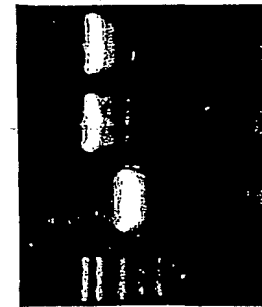
FIGURE 1E

**B**

5' end screening

G34/Pzeo &amp; Gex5F/Gex6R

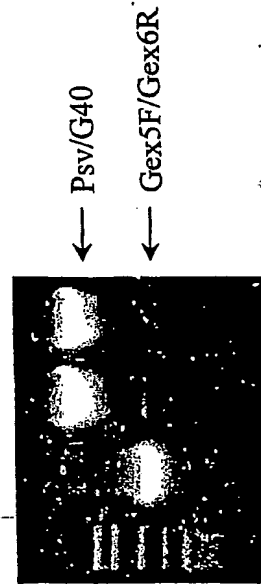
M WT 1 2



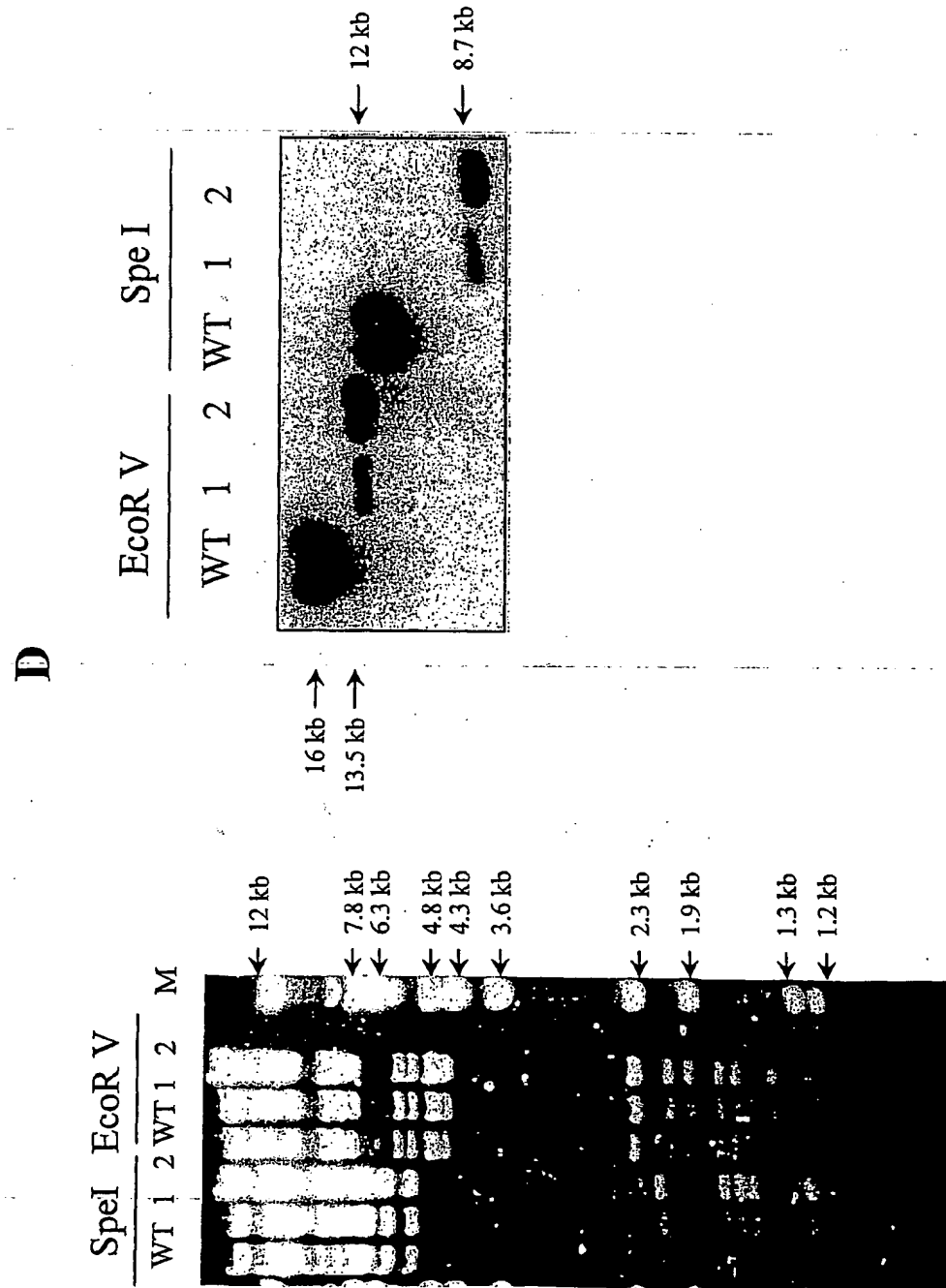
3' end screening

Psv/G40 &amp; Gex5F/Gex6R

M WT 1 2



Figures 2A and 2B



Figures 2C and 2D

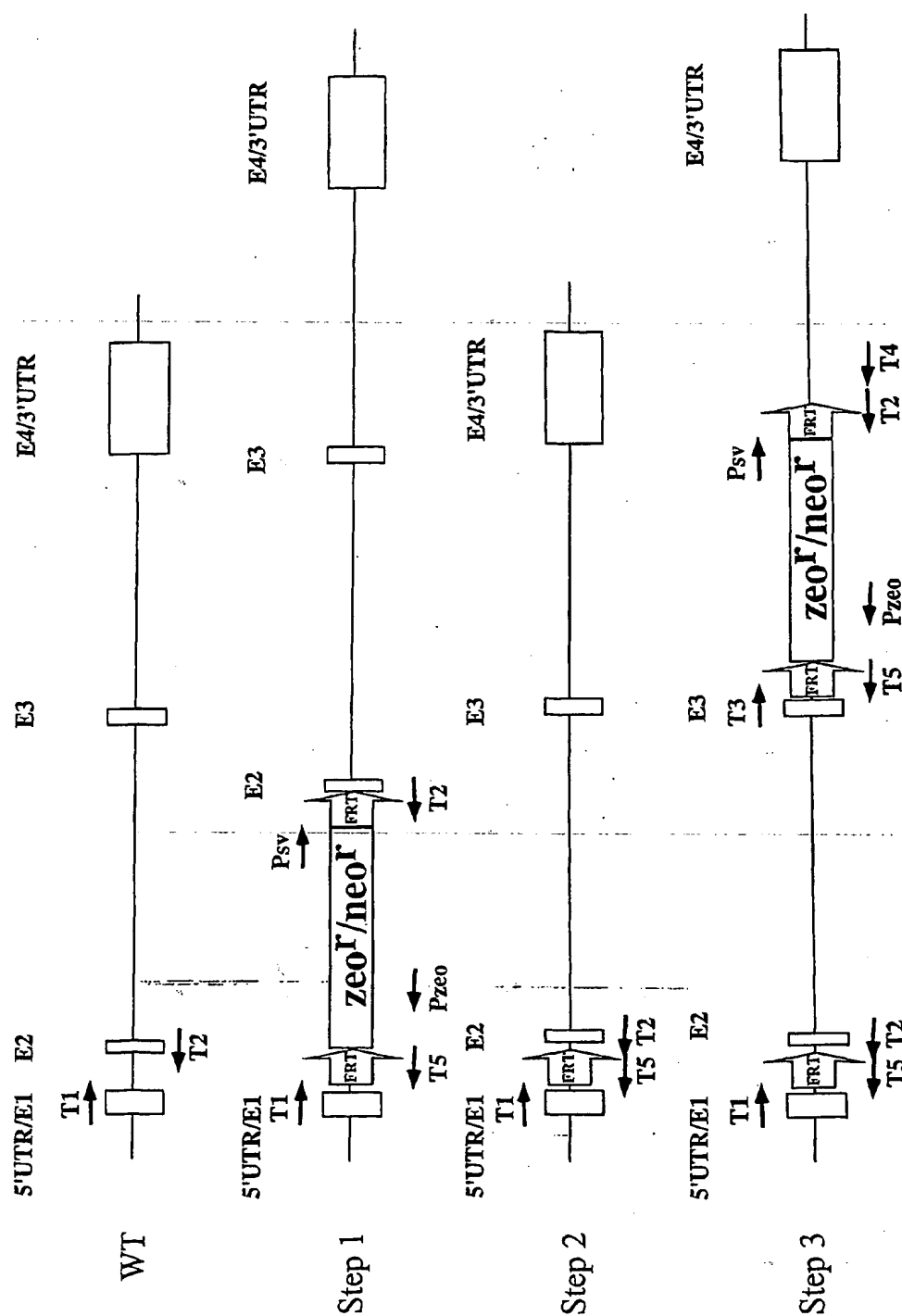


Figure 3A

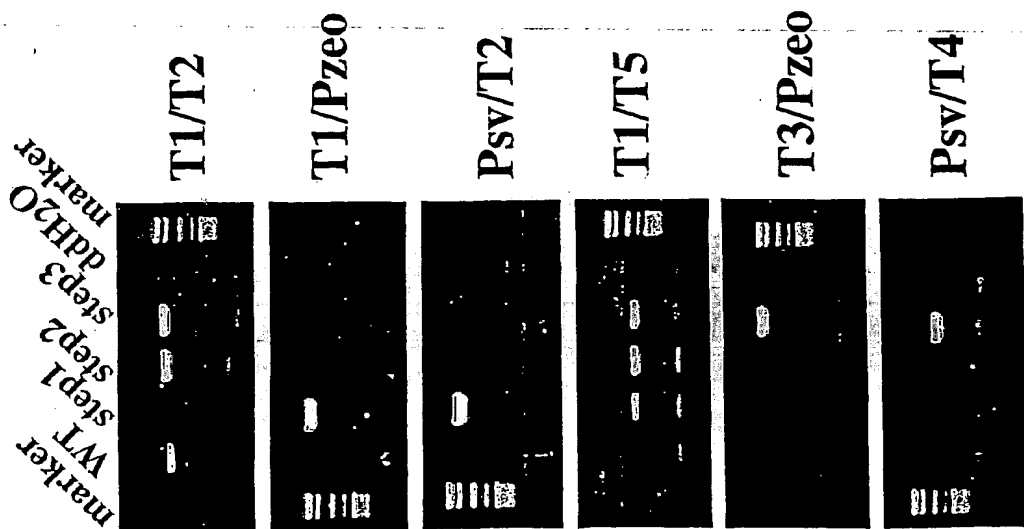
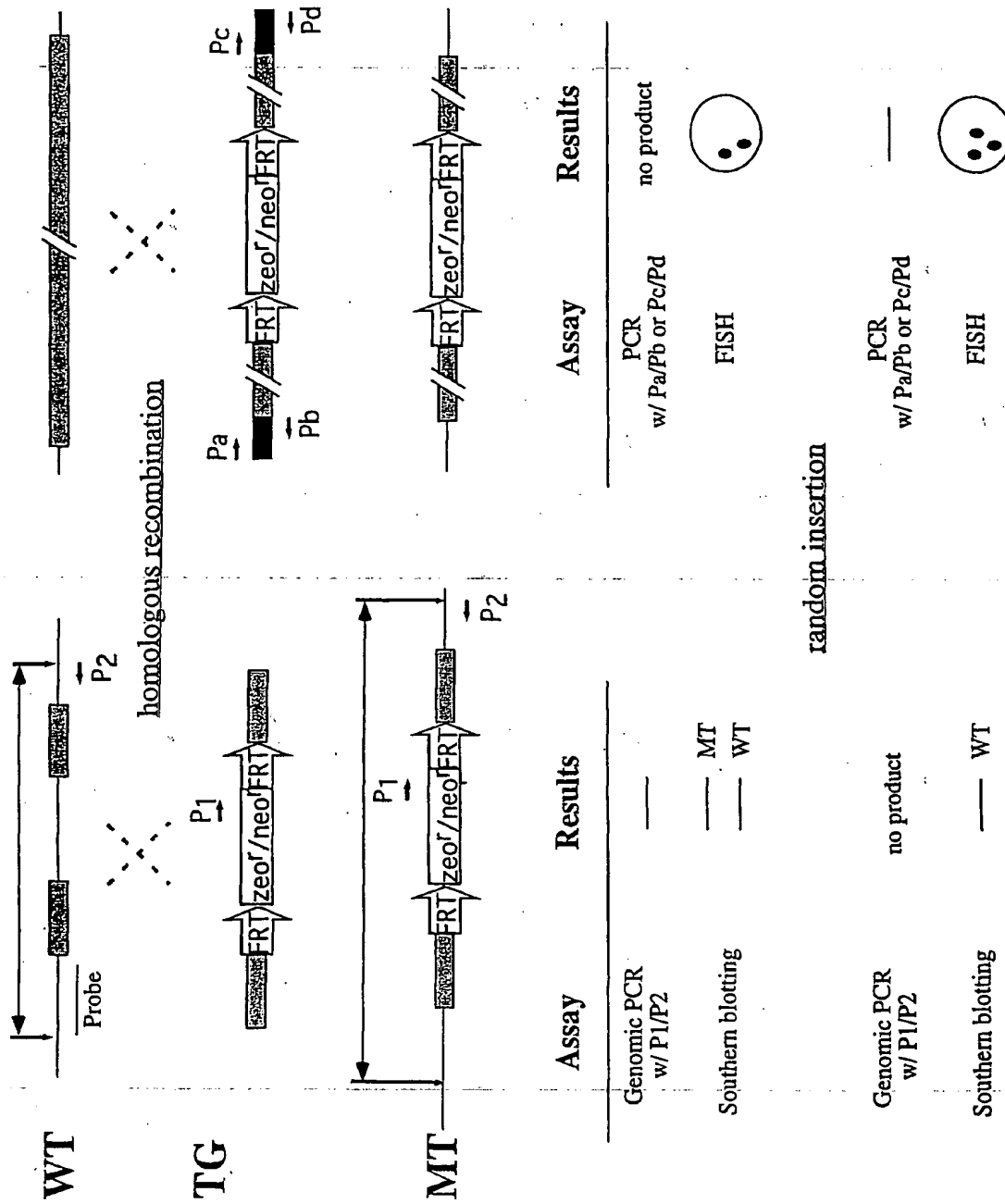


Figure 3B



A Figures 4A and 4B

B



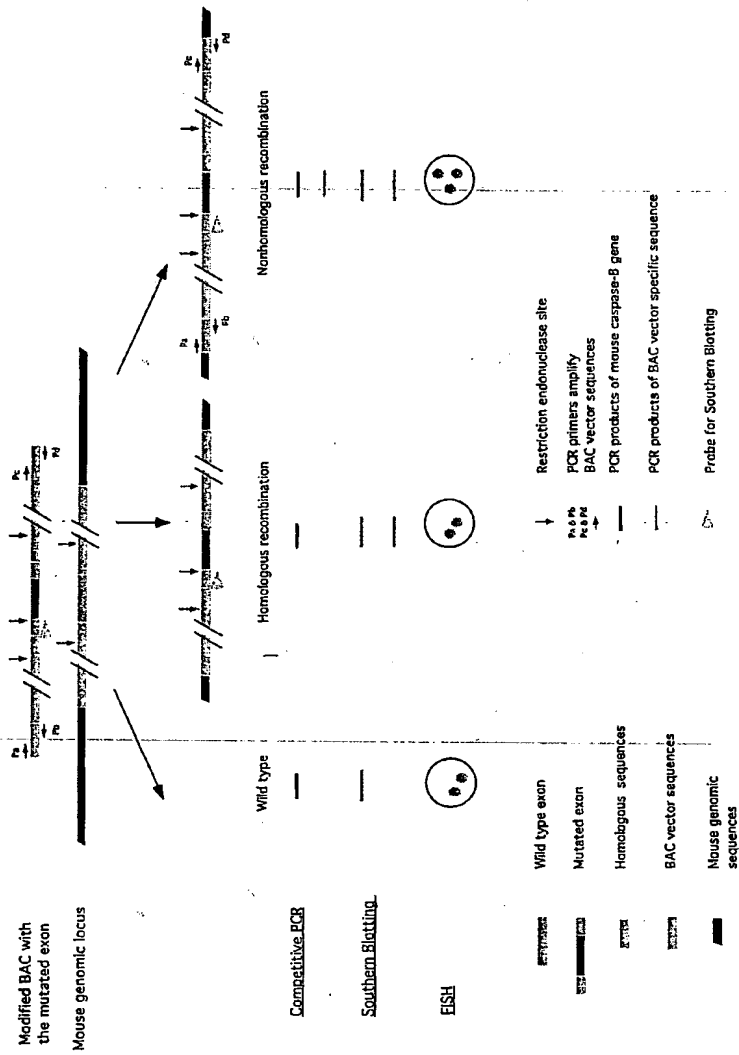
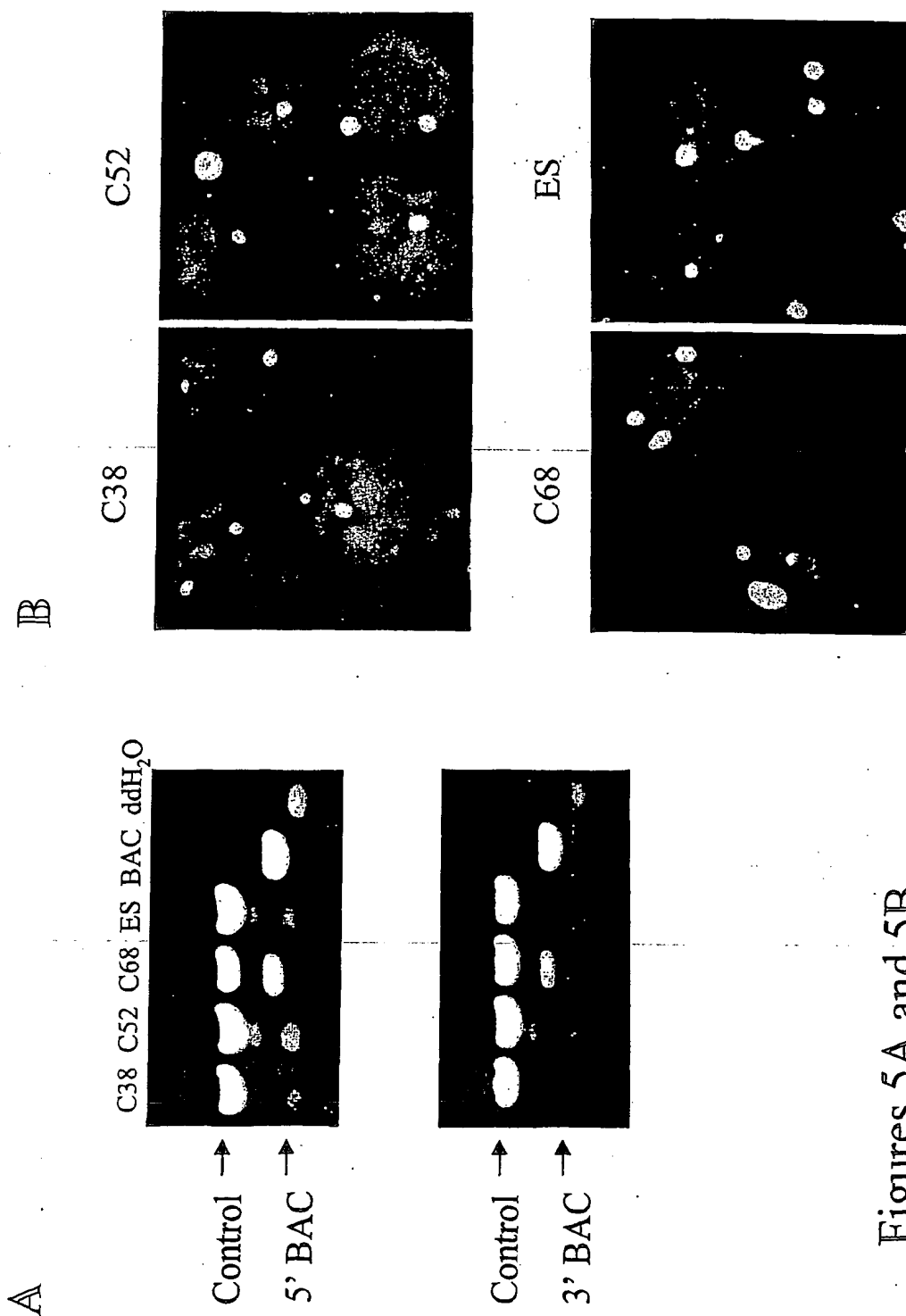


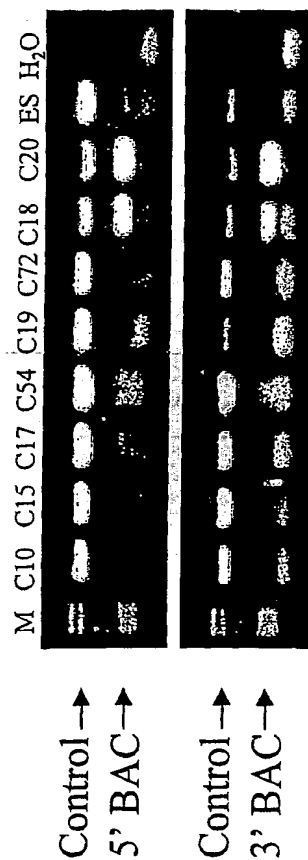
Figure 4C



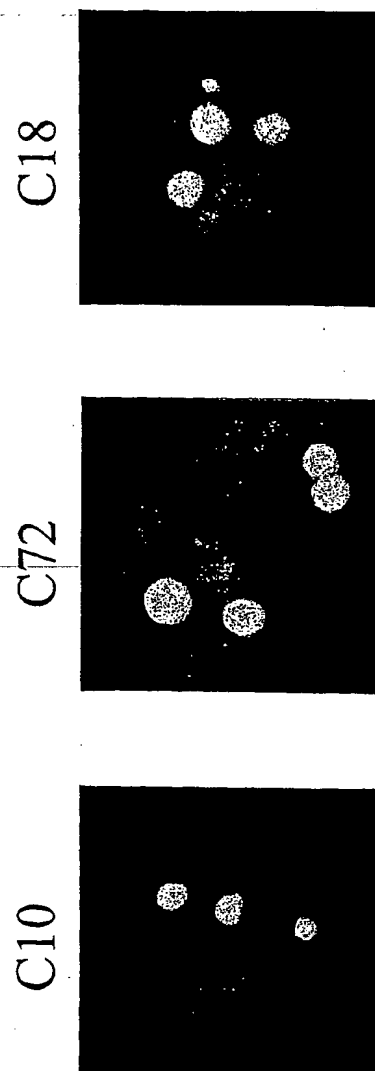
Figures 5A and 5B

Figures 6A and 6B

A



B



Figures 7A and 7B

A

## PCR Genotyping

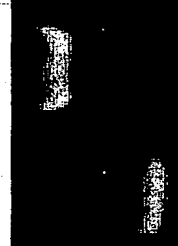
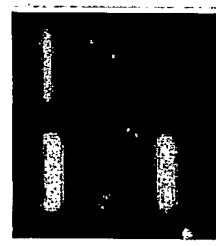
-/- +/+ +/+

*fancg/xrcc9**dok3/dok-L**Ikβras1*

B

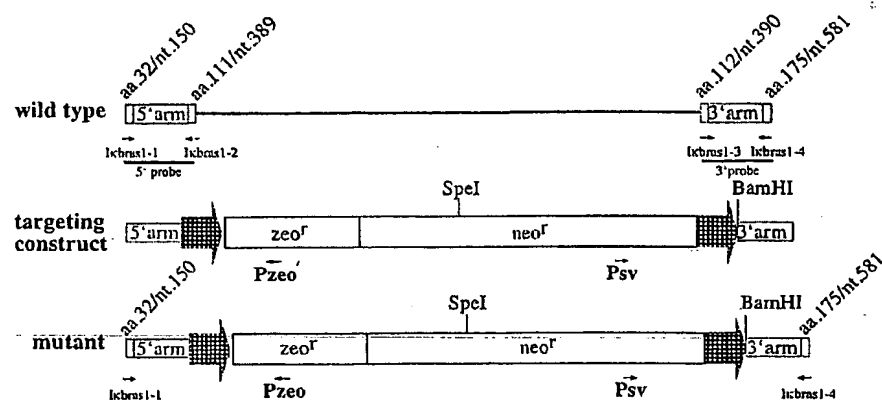
## RT-PCR

+/- -/-

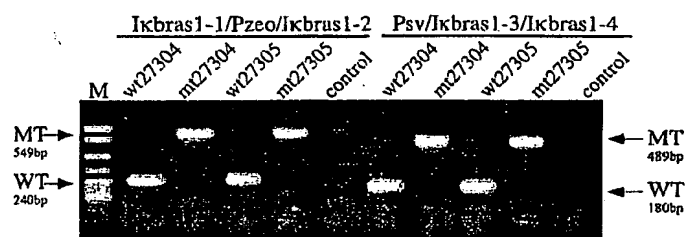
Control  
*fancg/xrcc9*Control  
*dok3/dok-L*Control  
*Ikβras1*

## Figures 8A-8D

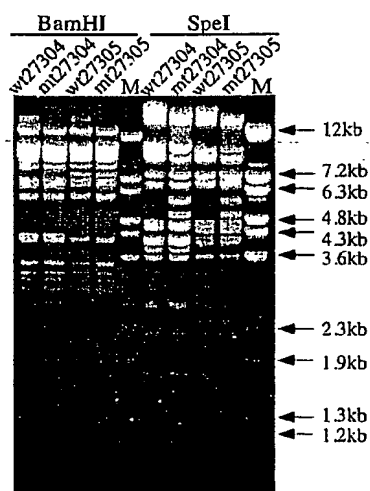
A



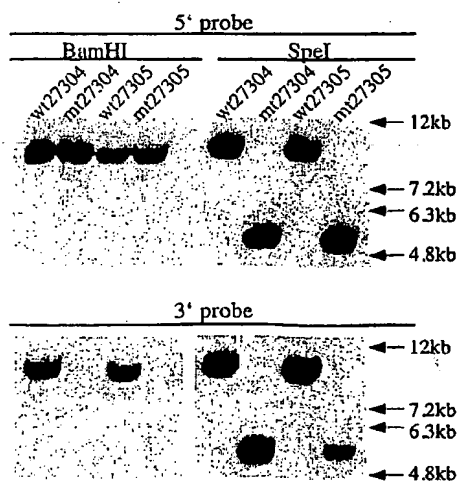
B



C



D



## Figures 9A-9D

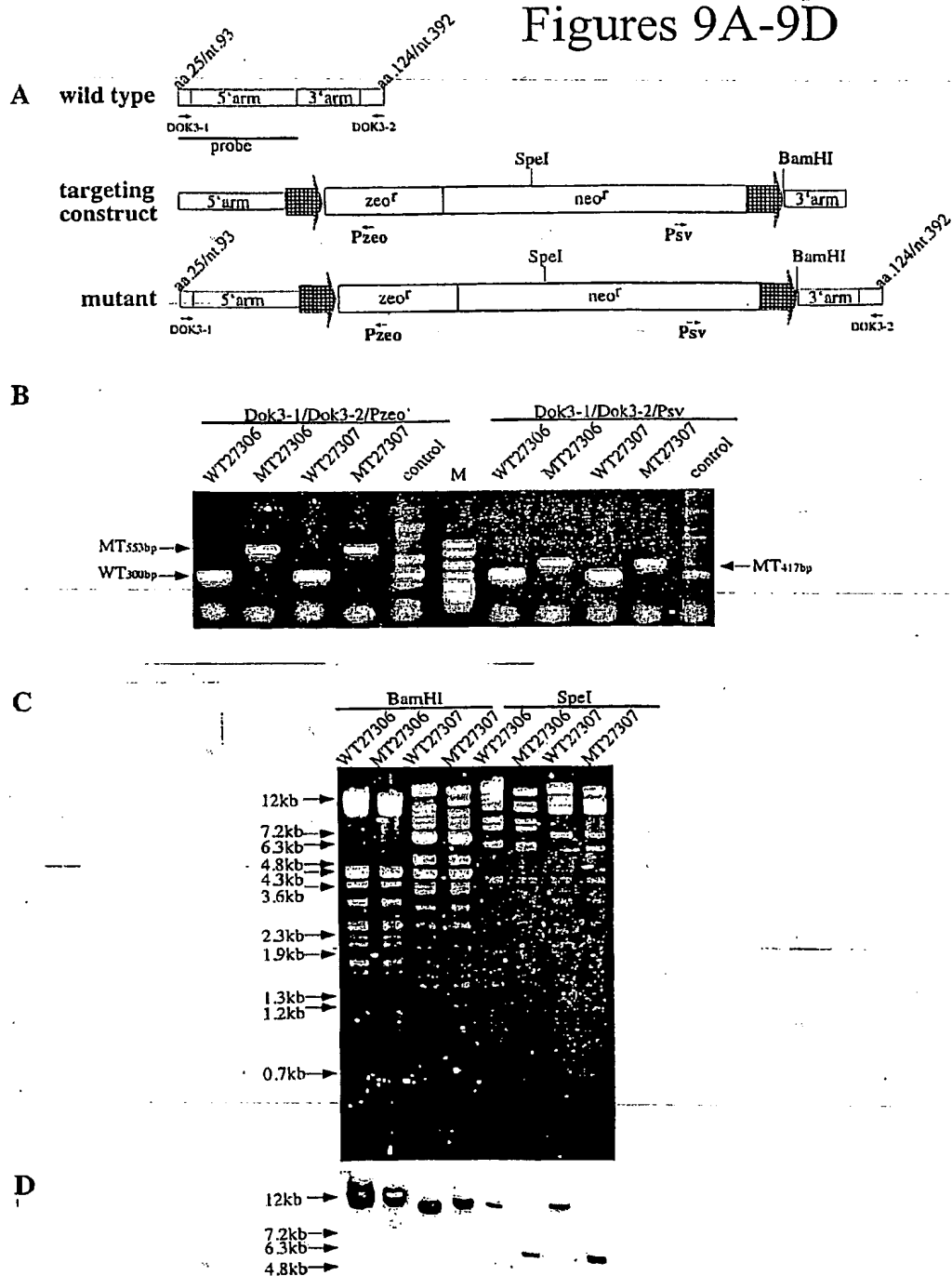


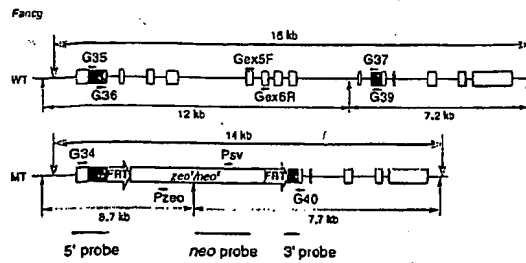
Figure 10

Gene/Clone	5'arm (nt)	3'arm (nt)	Deletion (nt)	Efficiency*
<i>fancg/xrcc9</i>	480	260	4900	100%
<i>Ikβras1.#1</i>	185	138	unknown	30%
<i>Ikβras1.#2</i>	185	138	unknown	25%
<i>tab2.#1</i>	213	340	869	30%
<i>tab2.#2</i>	213	340	869	50%
<i>pag.#1</i>	105	373	no	100%
<i>pag.#2</i>	105	373	no	58%
<i>pag.#3</i>	105	373	no	100%
<i>dok3/dok-L.#1</i>	188	93	no	42%
<i>dok3/dok-L.#2</i>	188	93	no	30%
<i>bruce</i>	50	50	no	100%

\*The efficiency was calculated based on nested PCR screening of 24 ampicillin and chloramphenicol double resistant colonies at the 3' integration site.

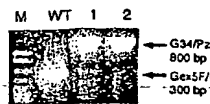


11A

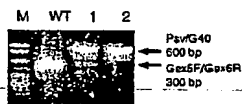


11B

5' end screening



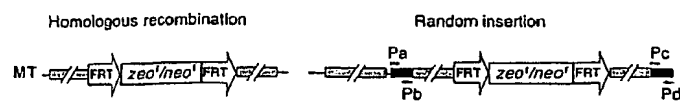
3' end screening



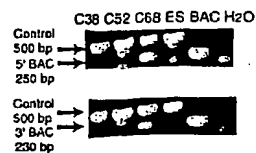
12A

WT

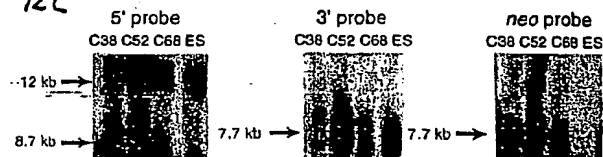
TG



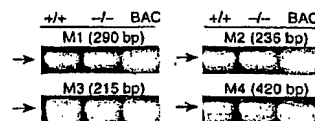
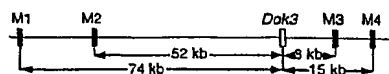
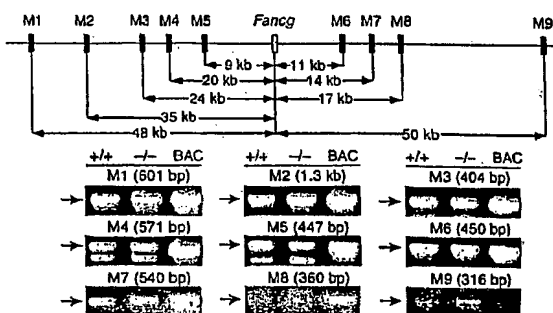
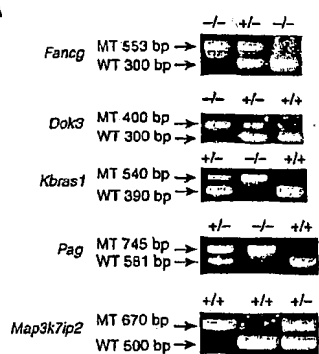
12B



12C



13 A

13 B

*Fancg* Control 350 bp →  
WT 300 bp →

*Dok3* Control 500 bp →  
WT 300 bp →

*Kbras1* Control 500 bp →  
WT 240 bp →

*Pag* WT 580 bp →  
Control 500 bp →

M1 M2 *Kbras1* M3

40 kb 9 kb 52 kb

*Kbras1* M1 (540 bp) M2 (355 bp) M3 (180 bp)

Figure 14

Gene	PCR screening/96 colonies				FISH screening			Effective targeting efficiency <sup>c</sup>
	no signal <sup>a</sup>	5' BAC	3' BAC	5' & 3' BAC	no BAC signal <sup>b</sup>	clonies screened	2 spots	3 spots
<i>FANCG</i>	36	4	6	28	22 (37%)	4	3 (75%)	1
<i>XRCC9</i>								28%
<i>IκBRS1</i>	1	16	12	15	52 (55%)	27	6 (22%)	21
<i>CBP/PAG</i>	6	10	5	32	43 (48%)	16	7 (44%)	9
<i>DOK3</i>								12%
<i>DOK-L</i>	6	12	9	55	14 (16%)	11	5 (45%)	6
<i>TAB2</i>	16	8	16	27	29 (36%)	10	2 (20%)	8
								7%
								7%

a. A high PCR failure rate (internal control negative) was seen with *FANCG/XRCC9* prior to the introduction of improved protocols.

b. Percentage calculation denominator excludes PCR failures.

c. The percentage with no vector signal multiplied by the percentage with two FISH spots.

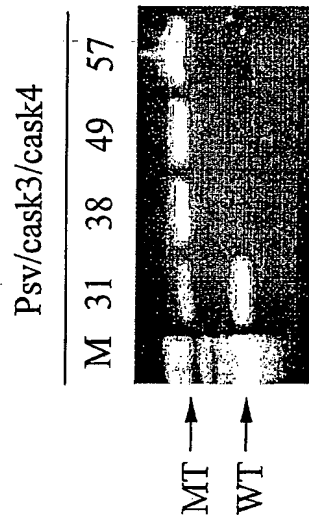


FIGURE 15

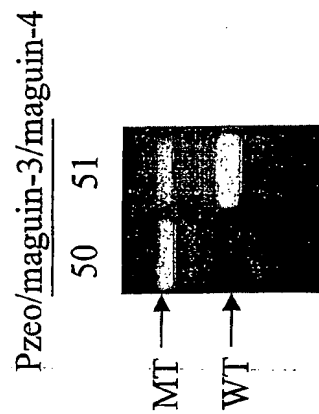
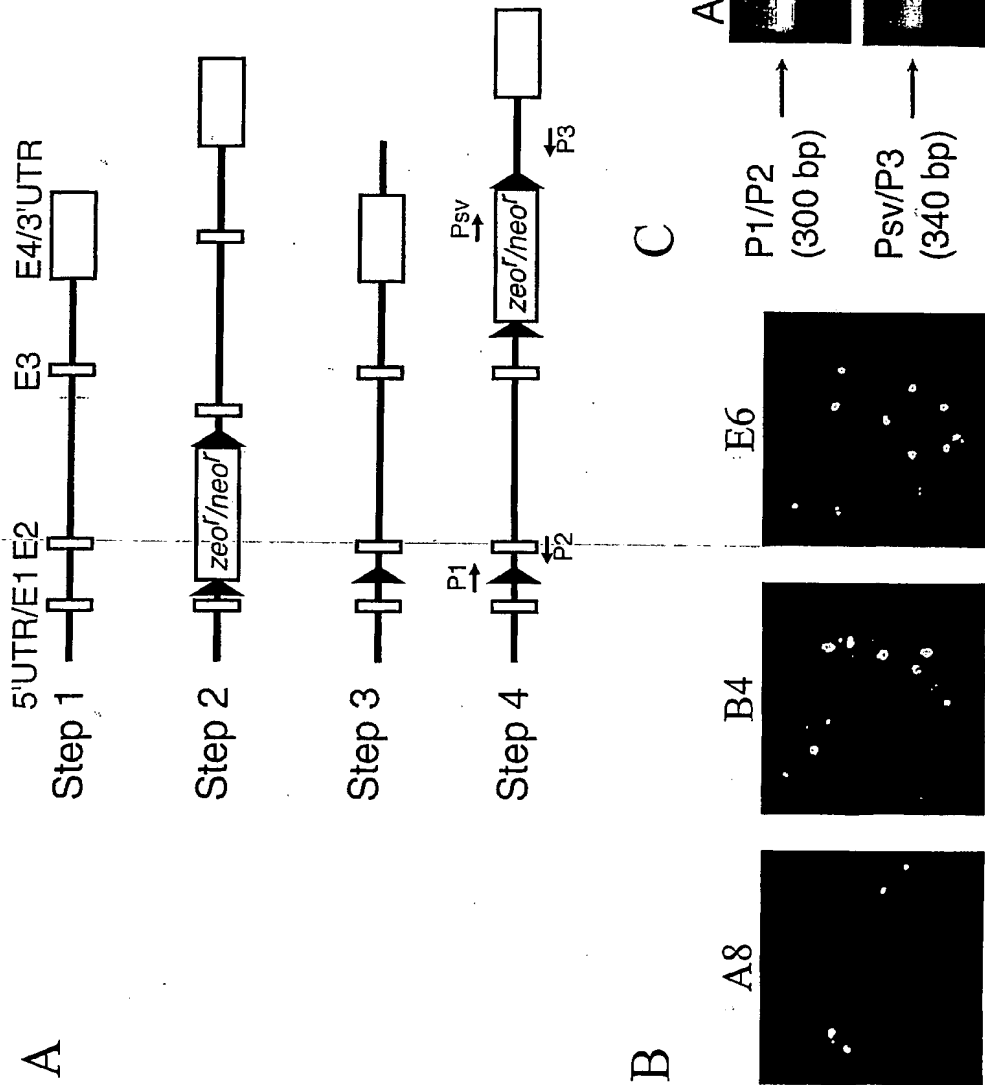


Figure 16

Figure 17



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